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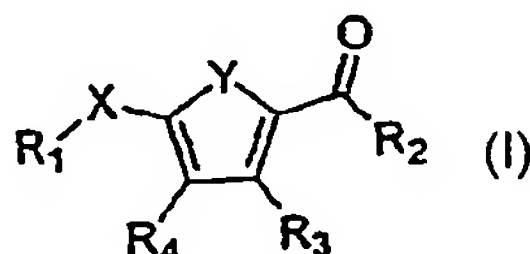
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(54) Title: **THIOPHENE DERIVATIVES FOR UP-REGULATING HLA-DM ACTIVITY**



(57) Abstract: Compounds of formula (I), compositions, methods and kits are provided. The compounds and compositions may be particularly useful for modulating immunological responses. Formula (I) wherein, R₁ is alkyl, aryl, or heterocyclyl; R₂ is H, alkyl, aryl, heterocyclyl, OR₃ or N(R₃)₂; R₃ is H, alkyl, aryl, or heterocyclyl; R₄ is H, CN, halogen, CF₃, CO₂R₃, or C(O)N(R₃)₂; X is S, SO₂, O, or NR₃; and Y is S, O, or NR₃.

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